



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/523,167 Confirmation No.:  
Applicant(s): Borran et al.  
Filed: January 27, 2005  
Art Unit: N/A  
Examiner: N/A  
Title: Method and Apparatus to Establish Constellations for  
Imperfect Channel State Information at Receiver  
Attorney Docket No.: 873.0115.U1(US)  
Customer No.: 29,683

Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Supplemental Information Disclosure Statement  
(37 C.F.R. §1.97(c))

Sir:

The following information is being disclosed to the U.S. Patent and Trademark Office as information that may be material to the examination of the above-identified patent application.

Applicant's Attorney is aware of the art cited on the attached Form PTO-1449. The documents were cited in a related Supplementary European Search Report. A copy of the Search Report is enclosed. Copies of the non-U.S. patents are enclosed with the Form PTO-1449 for the Examiner's use.

- ☒ Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement, or

☐ No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in this Statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this Statement.

The filing of this Statement is not to be construed as a representation that a search has been made regarding the claimed invention (37 C.F.R. §1.97(g)) or that no other possible material information exists. In addition, the filing of this Statement is not to be construed to be an admission that the information cited in the Statement is, or is considered to be, material to patentability (37 C.F.R. §1.97(h)).

Respectfully submitted,

Harry F. Smith      7/22/2005  
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail on the date shown below in an envelope addressed to: Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

7/22/05  
Date

Ann Okrentowich  
Ann Okrentowich

**INFORMATION DISCLOSURE  
CITATION FORM FOR  
PATENT APPLICATION  
(FORM PTO-1449)  
(Substitute)**

Docket No.: 873.0115.U1(US)

Serial No.: 10/523,167

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Group: N/A

**U.S. PATENT DOCUMENTS**

Examiner Initials	Document Number (Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant	Class	Sub-class
	US- US- US- US- US- US- US- US- US- US-				

**FOREIGN PATENT DOCUMENTS**

Examiner Initials	Document Number (Country Code-Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name Of Patentee of Applicant	Translation? Yes/No/n/a
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**OTHER DOCUMENTS (Author (Capitalize), Title, Date, Pages, Etc., if known)**

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	BORRAN, M.J., et al., "On Design Criteria and Construction of Non-coherent Space-Time Constellations", June 30-July 5, 2002, Proceedings ISIT, pg. 74
	CHUA, S-G, "Variable-Power MQAM for Fading Channels", April 28, 1996, Vehicular Technology Conference, pgs. 815-819
	BORRAN, M.J., "Partially Coherent Constellations for Multiple-Antenna Systems", November 9-12, 2003, Conference Record of the 37 <sup>th</sup> Asilomar Conference on Signals, Systems and Computers, California and New York, pgs. 1007-1011
	LEXA, M., "Useful Facts About the Kullback-Leibler Discrimination Distance", URL: <a href="http://www.ece.rice.edu/amlexa/publications/k1_properties.pdf">http://www.ece.rice.edu/amlexa/publications/k1_properties.pdf</a> , June 9, 2005, 11 pgs.

Examiner's Signature: /Kevin M Burd/

Date Considered: 02/19/2009

Initial if reference was considered, whether or not citation is in conformance with MPEP. Mark through citation if not considered.  
Include a copy of this citation form with your next correspondence to the Applicant(s).

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